



A:Title: Dense Alu clustering and a potential new member of the NFKappaB family within a  
A:Reference number: S36154; MUID:93272029; PMID:8499947  
A:Accession: S36154  
A>Status: nucleic acid sequence not shown; translation not shown  
A:Molecule type: DNA  
A:Residues: 1-12, 'R', 14-205 <IRI>  
A:Cross-references: EMBL:215026; NID:G37211; PID:CAA78746.1; PID:G37213  
A:Note: The nucleotide sequence was submitted to the EMBL Data Library, August 1992  
R:Abraham, L.J.; Du, D.C.; Zahedi, K.; Dawkins, R.L.; Whitehead, A.S.  
Immunogenetics 33, 50-53, 1991  
A:Title: Haplotypic polymorphisms of the TNF gene.  
A:Reference number: I54482; MUID:91139175; PMID:1671667  
A:Accession: I54482  
A>Status: translation not shown; translated from GB/EMBL/DBJ  
A:Molecule type: DNA  
A:Residues: 1-124, 'P', 126-205 <RES>  
A:Cross-references: GB:M55913; NID:G339742; PID:AA559455.1; PID:G339743  
A:Experimental source: ancestral haplotype 57.1  
A:Note: P-57-Aen was also found (ancestral haplotype 8.1)  
R:Gray, F.W.; Aggarwal, B.B.; Benton, C.V.; Bringman, T.S.; Henzel, W.J.; Jarrett, J.A.;  
Nature 312, 721-724, 1984  
A:Title: Cloning and expression of cDNA for human lymphotoxin, a lymphokine with tumour  
A:Reference number: A93350; MUID:85086243; PMID:6334807  
A:Accession: A93350  
A:Molecule type: mRNA  
A:Residues: 1-205 <GRA>  
A:Cross-references: GB:X01393; NID:G34444; PID:CAA25649.1; PID:G34445  
A:Experimental source: lymphoblastoid cell line RPMI-1788  
R:Goeddel, D.V.; Aggarwal, B.B.; Gray, P.W.; Leung, D.W.; Nedwin, G.E.; Palladino, M.A.;  
Cold Spring Harb. Symp. Quant. Biol. 51, 597-609, 1986  
A:Title: Tumor necrosis factors: Gene structure and biological activities.  
A:Reference number: A32877; MUID:87217059; PMID:3472740  
A:Accession: B32877  
A>Status: Preliminary; not compared with conceptual translation  
A:Molecule type: mRNA  
A:Residues: 35-205 <GOE>  
R:Kobayashi, Y.; Miyamoto, D.; Asada, M.; Ohinata, M.; Osawa, T.  
J. Biochem. 100, 727-733, 1986  
A:Title: Cloning and expression of human lymphotoxin mRNA derived from a human T cell by  
A:Reference number: A91906; MUID:87057135; PMID:3536996  
A:Accession: A91906  
A:Molecule type: mRNA  
A:Residues: 1-59, 'N', 61-205 <KOB>  
A:Cross-references: GB:D00102; NID:G219913; PID:BA000064.1; PID:G219914  
A:Note: The authors translated the codon TAT for residue 156 as Thr and ACC for residue  
R:Fukuda, S.; Ando, S.; Sanou, O.; Tanai, M.; Masaki, N.; Nakamura, K.I.; Ar  
Lymphokine Res. 7, 175-185, 1988  
A:Title: Simultaneous production of natural human tumor necrosis factor-alpha, -beta and  
A:Reference number: A61478; MUID:88301617; PMID:2841543  
A:Accession: A61478  
A:Molecule type: protein  
A:Residues: 56-79; 86-95, 'X', 97, 'X', 99, 119-151, 'XX', 154-162, 'X', 164, 'X', 166, 'X', 169, 'X', 1  
R:Voigt, C.G.; Maurer-Poggy, I.; Adolf, G.R.  
FEBS Lett. 314, 85-88, 1992  
A:Title: Natural human tumor necrosis factor beta (lymphotoxin). Variable O-glycosylation  
A:Reference number: S26951; MUID:93083656; PMID:1451807  
A:Accession: S26951  
A:Molecule type: protein  
A:Residues: 35-59, 'N', 61-205 <VOI>  
A:Note: 60-Thr was also found  
R:Fukushima, K.; Watanabe, H.; Takeo, K.; Nomura, M.; Asahi, T.; Yamashita, K.  
Arch. Biochem. Biophys. 304, 144-153, 1993  
A:Title: N-linked sugar chain structure of recombinant human lymphotoxin produced by CHO  
A:Reference number: S34742; MUID:93311995; PMID:8323280  
A:Contents: annotation  
C:Comment: Secreted from mitogen-activated lymphocytes within 1-2 days after induction,  
while having no detrimental effect on normal cells. It can also act synergistically with  
C:Comment: This protein and TNF-alpha (tumor necrosis factor) are the products of differ  
ical activities but are produced by different cell types and have different induction ki  
C:Genetics:  
A:Gene: GDB:LTA; LT; TNFB  
A:Cross-references: GDB:120442; OMIM:153440  
A:Map position: 6p21.3-6p21.3

A:Introns: 33/3; 69/1  
A:Note: the first intron occurs before the initiator codon  
C:Superfamily: tumor necrosis factor  
C:Keywords: cytokine; cytoxin; glycoprotein; homotrimer; lymphokine; macrophage  
F:1-34/Domain: signal sequence #status predicted <SIG>  
F:35-205/Product: lymphotoxin #status predicted <MAR>  
F:41/Binding site: carbohydrate (Thr) (covalent) #status experimental  
F:56/Binding site: carbohydrate (Asn) (covalent) #status experimental  
Query Match 12.5%; Score 191; DB 1; Length 205;  
Best Local Similarity 27.4%; Pred. No. 4.4e-07; Indels 28; Gaps 4;  
Matches 57; Conservative 33; Mismatches 90  
QY 81 LCLLVNFFMVLVALVGL-GLGMFOLFLHOKELARLSTSQMTASSLEKQIGHPSPPPE 139  
DB 19 LLLGLLLVLLPGLPGLGVG-----LTPSAAQTARQHPKHLAHS----- 59  
QY 140 KKELRKVAHLTKGKNSRSMPELEWEDTYGIVLLSGYKKGGLVINETGLYFYVSKYVFRG 199  
DB 60 --TLKPAALHIDPQKQNSLLWRANDRAFLQDFSLNNSLLVFTSGIIFYVSVVPSG 117  
QY 200 Q-----SCNNPLPLSHKVMRNSKYPQDLVMBGDMGMSYCTTGQWMASSYLGAVNLT 253  
DB 118 KAYSPKATSSPLYLAEVQLFSSQYFFHVPLPLSQKQVYFGLQEPWLSMTYHGAFAQLTQ 177  
QY 254 ADHLYVNVSELSLVNFEESQTFGLYKL 281  
DB 178 GDQLSTHTDGIPLHLVLSPTVFFGAPAL 205  
RESULT: 8  
QY1344  
tumor necrosis factor alpha precursor - horse  
N:Alternate names: cachectin; TNF alpha  
C:Species: Equus caballus (domestic horse)  
C:Date: 10-Sep-1999 #sequence revision 10-Sep-1999 #text\_change 04-Feb-2000  
C:Accession: J01344  
F:SU: X.; Morris, D.D.; McGraw, R.A.  
Gene 107, 319-324, 1991  
A:Title: Cloning and characterization of gene TNF alpha encoding equine tumor necrosis fa  
A:Reference number: JQ1344; MUID:92084125; PMID:1748301  
A:Accession: JQ1344  
A:Molecule type: DNA  
A:Residues: 1-234 <SU>  
A:Cross-references: GB:M64087; NID:G164244; PID:AAA30959.1; PID:G164245  
C:Comment: This protein is an important proximal mediator of endotoxemia.  
C:Genetics:  
A:Gene: TNF-alpha  
A:Introns: 62/3; 79/1; 95/1  
C:Superfamily: tumor necrosis factor  
C:Keywords: cytokine; cytoxin; glycoprotein; lipoprotein; lymphokine; macrophage; memb  
F:78-234/Product: tumor necrosis factor alpha #status predicted <TN>  
F:19,20/Binding site: myristate (lys) (covalent) #status predicted  
F:82/Binding site: carbohydrate (Ser) (covalent) #status predicted  
F:146-178/Diulfide bonds: #status predicted  
Query Match 12.2%; Score 186.5; DB 1; Length 234;  
Best Local Similarity 27.2%; Pred. No. 1.1e-06; Indels 31; Gaps 10;  
Matches 62; Conservative 36; Mismatches 99  
QY 72 KRGHSTGLCLVMPFVVLVALVGLGMFOLFH-----OKELARLSTSQMTA 124  
DB 20 KAGQPSRRCLCLSLFSLF-----LVAGATTLFCLLHPGVIGPQREQLPNAFQINFL--A 75  
QY 125 SSLEKQIGHPSPPPEKELKVAHLTKGNSRSMPELEW-EDTYGIVLLSGYKKGGLVI 193  
DB 76 QTLRSSRTSDXP-----VAHVANPQEGQ--LQWLSGRANALANGVKLTNDQLV 127  
QY 184 NETGLYFYVSKYVFRQSC--NNPLSHKVMRNSKYPQDLVMBGDMGMSYCTT----- 235  
DB 128 PLDGLYLYSVQLFKGCGCFSTHLLTHLSRLAVSPSKVNLISA-IKSPCHTESPEQA 186  
QY 236 -GQWMASSYLGAVNLTADHLYVNVSELSLVNFEES-QTFGLYKL 281  
DB 187 EAKPWYEPITLGGVFLKRGDQLSABINQPNYLDPAESQVYFGIAL 234

a-2.rapb

1 MOQFNVPYQIYVWSSASPPWAGPGLPCFTSVPRRQQRPPPPPLPPPPP 60  
 1 MOQFNVPYQIYVWSSASPPWAGPGLPCFTSVPRRQQRPPPPPLPPPPP 60  
 61 PPLPPLPPLPPLPPLPPLPPLPPLPPLPPLPPLPPLPPLPPLPPLPPL 120  
 61 PPLPPLPPLPPLPPLPPLPPLPPLPPLPPLPPLPPLPPLPPLPPLPPL 120  
 121 MHTASL---CHPSPPPEKELRKVAHLTGKNSRSMPLMEDTYGIVLSGVKXKGG 176  
 121 MHTASL---CHPSPPPEKELRKVAHLTGKNSRSMPLMEDTYGIVLSGVKXKGG 180  
 177 LVINETGLYFYVSKYFRQSCNNPLSHKVTMNSKYPOQLVMEGKMSYCTTGQMA 236  
 181 LVINETGLYFYVSKYFRQSCNNPLSHKVTMNSKYPOQLVMEGKMSYCTTGQMA 240  
 237 RSSTLCGVNLTSAHLVYVNSLSLVNFEESQTFPLLYL 277  
 241 RSSTLCGVNLTSAHLVYVNSLSLVNFEESQTFPLLYL 281

Query Match 99.2%; Score 1492; DB 9; Length 281;  
 Best Local Similarity 98.6%; Pred. No. 2.3e-105; Indels 4; Gaps 1;  
 Matches 277; Conservative 0; Mismatches 0;  
 QY 1 MOQFNVPYQIYVWSSASPPWAGPGLPCFTSVPRRQQRPPPPPLPPPPP 60  
 DB 1 MOQFNVPYQIYVWSSASPPWAGPGLPCFTSVPRRQQRPPPPPLPPPPP 60  
 QY 61 PPLPPLPPLPPLPPLPPLPPLPPLPPLPPLPPLPPLPPLPPLPPLPPL 120  
 DB 61 PPLPPLPPLPPLPPLPPLPPLPPLPPLPPLPPLPPLPPLPPLPPLPPL 120  
 QY 121 MHTASL---CHPSPPPEKELRKVAHLTGKNSRSMPLMEDTYGIVLSGVKXKGG 176  
 DB 121 MHTASL---CHPSPPPEKELRKVAHLTGKNSRSMPLMEDTYGIVLSGVKXKGG 180  
 QY 177 LVINETGLYFYVSKYFRQSCNNPLSHKVTMNSKYPOQLVMEGKMSYCTTGQMA 236  
 DB 181 LVINETGLYFYVSKYFRQSCNNPLSHKVTMNSKYPOQLVMEGKMSYCTTGQMA 240  
 QY 237 RSSTLCGVNLTSAHLVYVNSLSLVNFEESQTFPLLYL 277  
 DB 241 RSSTLCGVNLTSAHLVYVNSLSLVNFEESQTFPLLYL 281

RESULT 5

US-09-252-656B-6  
 ; Sequence 6, Application US/09252656B  
 ; Patent No. US20020081847A1  
 ; GENERAL INFORMATION  
 ; APPLICANT: Eber, Reinhard  
 ; APPLICANT: Yu, Guo-Liang  
 ; APPLICANT: Ruben, Steven M.  
 ; APPLICANT: Ullrich, Stephen  
 ; APPLICANT: Zhai, Yifan  
 ; TITLE OF INVENTION: Apoptosis Inducing Molecule II and Methods of Use  
 ; FILE REFERENCE: 1488.0650006  
 ; CURRENT APPLICATION NUMBER: US/09/252,656B  
 ; PRIORITY APPLICATION NUMBER: US/02/409,409  
 ; PRIOR FILING DATE: 1998-02-20  
 ; PRIOR APPLICATION NUMBER: US/03/027,287  
 ; PRIOR FILING DATE: 1998-02-20  
 ; PRIOR APPLICATION NUMBER: US/03/003,886  
 ; PRIOR FILING DATE: 1998-01-07  
 ; PRIOR APPLICATION NUMBER: US/08/822,953  
 ; PRIOR FILING DATE: 1998-03-21  
 ; PRIOR APPLICATION NUMBER: US/60/030,157  
 ; PRIOR FILING DATE: 1996-10-31  
 ; NUMBER OF SEQ ID NOS: 61  
 ; SOFTWARE: Patent in version 3.1  
 ; SEQ ID NO 6  
 ; LENGTH: 281  
 ; TYPE: PRT  
 ; ORGANISM: Homo sapiens  
 ; US-09-252-656B-6

Query Match 99.2%; Score 1492; DB 9; Length 281;  
 Best Local Similarity 98.6%; Pred. No. 2.3e-105;  
 Matches 277; Conservative 0; Mismatches 0; Indels 4; Gaps 1;

Sequence 6, Application US/09027287A

Patent No. US20020064869A1  
 ; GENERAL INFORMATION  
 ; APPLICANT: Eber, Reinhard  
 ; APPLICANT: Yu, Guo-Liang  
 ; APPLICANT: Ruben, Steven M.  
 ; APPLICANT: Ullrich, Stephen  
 ; APPLICANT: Zhai, Yifan  
 ; TITLE OF INVENTION: Apoptosis Inducing Molecule II  
 ; FILE REFERENCE: 1488.0650004  
 ; CURRENT APPLICATION NUMBER: US/09/027,287A  
 ; PRIOR FILING DATE: 1998-02-20  
 ; PRIOR APPLICATION NUMBER: US/03/003,886  
 ; PRIOR FILING DATE: 1998-01-07  
 ; PRIOR APPLICATION NUMBER: US/08/822,953  
 ; PRIOR FILING DATE: 1997-03-21  
 ; PRIOR APPLICATION NUMBER: US/60/030,157  
 ; PRIOR FILING DATE: 1996-10-31

EARLIER APPLICATION NUMBER: US 60/013,923

EARLIER FILING DATE: 1996-03-22

NUMBER OF SEQ ID NOS: 55

SOFTWARE: Patent in Ver. 2.0

SEQ ID NO: 6

LENGTH: 281

TYPE: PRT

ORGANISM: Homo sapiens

US-09-027-287-6

RESULT 4  
US-09-027-287-6  
; Sequence 6, Application US/09027287A  
; Patent No. US20020064869A1  
; GENERAL INFORMATION:  
; APPLICANT: Ebner, Reinhard  
; APPLICANT: Yu, Guo-Liang  
; APPLICANT: Ruben, Steven M.  
; APPLICANT: Ullrich, Stephen  
; APPLICANT: Zhai, Yifan  
; TITLE OF INVENTION: Apoptosis Inducing Molecule II  
; FILE REFERENCE: 1488.0650004  
; CURRENT APPLICATION NUMBER: US/09/027,287A  
; EARLIER FILING DATE: 1998-02-20  
; EARLIER APPLICATION NUMBER: US 09/003,886  
; EARLIER FILING DATE: 1998-02-20  
; EARLIER APPLICATION NUMBER: US 08/822,953  
; EARLIER FILING DATE: 1997-03-21  
; EARLIER APPLICATION NUMBER: US 60/030,157  
; EARLIER FILING DATE: 1996-10-31

; EARLIER APPLICATION NUMBER: US 60/013,923

Best Local Similarity 91.8%; Pred. No. 3,6e-98;  
Matches 258; Conservative 0; Mismatches 0; Indels 23; Gaps 1;  
QY 1 MQCPNYPVPIQIYWDSSASSPAPPTVLPCTSVPRRGQRPPPPPPPLPPPPPP 60  
DB 1 MQCPNYPVPIQIYWDSSASSPAPPTVLPCTSVPRRGQRPPPPPPPLPPPPPP 60  
QY 61 PPLPPLPPLKKGNGHSTGLCLVMPFVVALVGLGNGFQLHQLKELARESTSQ 120  
DB 61 PPLPPLPPLKKGNGHSTGLCLVMPFVVALVGLGNGFQLHQLKELARESTSQ 120  
QY 111 -----PSPPEKCELRKVAHATKNSNSMPLEWDTGIVLLSGVYKKG 157  
DB 121 MTASSLEKQIGHSPPEKCELRKVAHATKNSNSMPLEWDTGIVLLSGVYKKG 180  
QY 158 LVINETGLYFYYSKYVFFGSCNNLPLSHKYVWNSKYPQDLVWMEGOMSYCTTGQWMA 217  
DB 181 LVINETGLYFYYSKYVFFGSCNNLPLSHKYVWNSKYPQDLVWMEGOMSYCTTGQWMA 240  
QY 218 RSSYLGAVNLTSDHLYVNSLSLVNPFESQTFGLYKL 258  
DB 241 RSSYLGAVNLTSDHLYVNSLSLVNPFESQTFGLYKL 281

Query Match 98.5%; Score 1389.5; DB 9; Length 281;  
Best Local Similarity 91.8%; Pred. No. 3,6e-98;  
Matches 258; Conservative 0; Mismatches 0; Indels 23; Gaps 1;  
QY 1 MQCPNYPVPIQIYWDSSASSPAPPTVLPCTSVPRRGQRPPPPPPPLPPPPPP 60  
DB 1 MQCPNYPVPIQIYWDSSASSPAPPTVLPCTSVPRRGQRPPPPPPPLPPPPPP 60  
QY 61 PPLPPLPPLKKGNGHSTGLCLVMPFVVALVGLGNGFQLHQLKELARESTSQ 120  
DB 61 PPLPPLPPLKKGNGHSTGLCLVMPFVVALVGLGNGFQLHQLKELARESTSQ 120  
QY 111 -----PSPPEKCELRKVAHATKNSNSMPLEWDTGIVLLSGVYKKG 157  
DB 121 MTASSLEKQIGHSPPEKCELRKVAHATKNSNSMPLEWDTGIVLLSGVYKKG 180  
QY 158 LVINETGLYFYYSKYVFFGSCNNLPLSHKYVWNSKYPQDLVWMEGOMSYCTTGQWMA 217  
DB 181 LVINETGLYFYYSKYVFFGSCNNLPLSHKYVWNSKYPQDLVWMEGOMSYCTTGQWMA 240  
QY 218 RSSYLGAVNLTSDHLYVNSLSLVNPFESQTFGLYKL 258  
DB 241 RSSYLGAVNLTSDHLYVNSLSLVNPFESQTFGLYKL 281

RESULT 5  
US-09-252-656B-6  
; Sequence 6, Application US/09252656B  
; Patent No. US20020081647A1  
; GENERAL INFORMATION:  
; APPLICANT: Ebner, Reinhard  
; APPLICANT: Yu, Guo-Liang  
; APPLICANT: Ruben, Steven M.  
; APPLICANT: Ullrich, Stephen  
; APPLICANT: Zhai, Yifan  
; TITLE OF INVENTION: Apoptosis Inducing Molecule II and Methods of Use  
; FILE REFERENCE: 1488.0650006  
; CURRENT APPLICATION NUMBER: US/09/252,656B  
; EARLIER FILING DATE: 1999-02-19  
; EARLIER APPLICATION NUMBER: US 60/075,409  
; EARLIER FILING DATE: 1998-02-20  
; EARLIER APPLICATION NUMBER: US 09/027,287  
; EARLIER FILING DATE: 1998-02-20  
; EARLIER APPLICATION NUMBER: US 09/003,886  
; EARLIER FILING DATE: 1998-01-07  
; EARLIER APPLICATION NUMBER: US 08/822,953  
; EARLIER FILING DATE: 1997-03-21  
; EARLIER APPLICATION NUMBER: US 60/013,923  
; EARLIER FILING DATE: 1996-03-22  
; EARLIER APPLICATION NUMBER: US 60/030,157  
; EARLIER FILING DATE: 1996-10-31  
; NUMBER OF SEQ ID NOS: 61  
; SOFTWARE: PatentIn version 3.1  
; SEQ ID NO 6  
; LENGTH: 281  
; TYPE: PRT  
; ORGANISM: Homo sapiens  
US-09-252-656B-6

Query Match 98.5%; Score 1389.5; DB 9; Length 281;  
Best Local Similarity 91.8%; Pred. No. 3,6e-98;  
Matches 258; Conservative 0; Mismatches 0; Indels 23; Gaps 1;